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Cryptocoryneum parvulum, a new species on *Araucaria angustifolia* (Brazilian pine)

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Abstract—*Cryptocoryneum parvulum* sp. nov., collected on decaying needle-like leaves of *Araucaria angustifolia,* is described and illustrated. It is distinguished by clavate inflated conidiophores and small cheiroid conidia with black cap cells and four pendulous arms of pale brown cells. Two other *Cryptocoryneum* species, *C. condensatum* and *C. rilstonei*, are newly recorded and illustrated. A key to *Cryptocoryneum* species found in Brazil is provided.

Key words— asexual fungi, systematics, subtropical fungi

Introduction

During a mycological survey of fungi associated with litter at a Brazilian araucaria forest, an interesting *Cryptocoryneum* specimen was collected from decaying needle-like leaves. It showed remarkable differences from all previously described *Cryptocoryneum* species (Ellis 1971, 1976) and is therefore described here as new.

Materials & methods

Samples of litter were placed in paper bags, taken to the laboratory, and prepared according to Castañeda-Ruiz (2005). Mounts were prepared in PVL (polyvinyl alcohol, lactic acid, and phenol) and measurements were made at a magnification of ×1000. Micrographs were obtained with an Olympus BX51 microscope equipped with bright field and Nomarski interference optics. The type specimen is deposited in the Herbarium of Universidade Estadual de Feira de Santana (HUEFS).

Taxonomy

Cryptocoryneum parvulum S.S. Silva, Gusmão & R.F. Castañeda, **sp. nov.** Fig.1
IF 550828

Differs from other *Cryptocoryneum* spp. by its inflated conidiophores and conidiogenous cells and its smaller, cheiroid conidia with dark cap cells and four pendulous, 3–4-septate, pale brown to subhyaline arms.

Type: Brazil, Rio Grande do Sul State: São Francisco de Paula, Floresta Nacional de São Francisco de Paula, 29°25 S 50°23 W, 838 m alt., on decaying needle-like leaves of *Araucaria angustifolia* (Bertol.) Kuntze (*Araucariaceae*), 27.VIII.2014, coll. S.S. Silva. (**Holotype**, HUEFS 210439).

Etymology: Latin, *parvulum*, referring to the small conidia.

Conidiomata sporodochial, pulvinate, 75–140 µm diam., scattered, black. Mycelium superficial and immersed. Hyphae septate, branched, 2.5–3 µm diam., smooth, brown. Conidiophores distinct, clavate, inflated, single, erect, straight, close packet, pale brown, 0–2-septate, smooth, 15–25 × 9 16.5 µm. Conidiogenous cells monoblastic, clavate to cylindrical or doliiform, integrated, terminal, determinate. Conidia solitary, acrogenous, cheiroid, branched, 12–23 × 10.5–15 µm, with black cap cells and four pendulous pale brown arms, smooth, 3–4-septate, 2.5–5 µm wide.

Note: *Cryptocoryneum* Fuckel (Ellis 1971, 1976, Schoknecht & Crane 1977) is characterized by monoblastic conidiogenous cells, and cheiroid conidia composed of a series of dark brown cap cells from which the pendulous arms develop.

Additional *Cryptocoryneum* records from Brazil

Cryptocoryneum condensatum (Wallr.) E.W. Mason & S. Hughes ex S. Hughes, Can. J. Bot. 36: 758 (1958). Fig. 2 A–D

Specimen examined: **BRAZIL**, **Rio Grande do Sul State**, São Francisco de Paula, Floresta Nacional de São Francisco de Paula, 29°25 S 50°23 W, 838 m alt., on decaying needle-like leaves of *Araucaria angustifolia*, 29.IX.2014, coll. S.S. Silva (HUEFS 210440).

Note: A new record for Brazil.

Cryptocoryneum rilstonei M.B. Ellis, Mycol. Pap. 131: 2 (1972). Fig. 2 E–H

Specimen examined: **BRAZIL**, **Rio Grande do Sul State**, São Francisco de Paula, Floresta Nacional de São Francisco de Paula 29°25 S 50°23 W, 838 m alt., on decaying needle-like leaves of *Araucaria angustifolia*, 21.VIII.2014, coll. S.S. Silva (HUEFS 210441).

Note: A new record for Brazil.

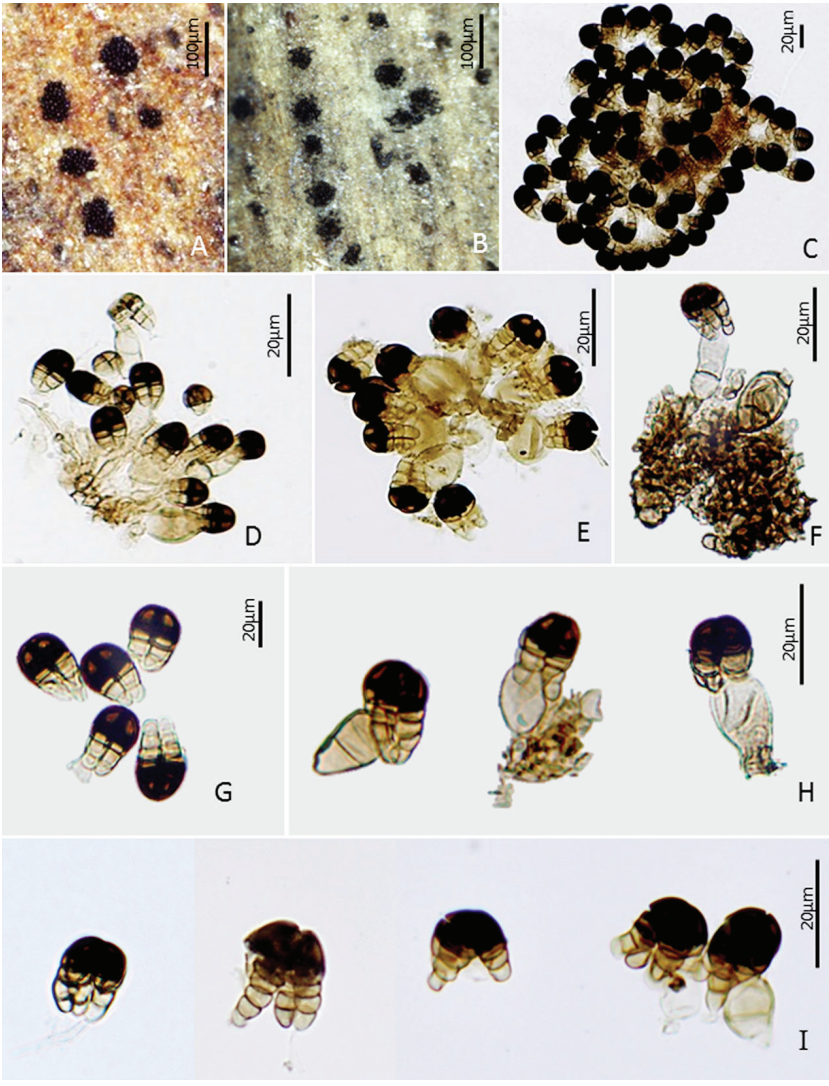

Fig. 1. *Cryptocoryneum parvulum* (holotype, HUEFS 210439): A–B. Sporodochia on natural substrate. C–E. Sporodochia. F. Conidiophores, conidiogenous cells and conidia. G–H. Conidiogenous cell and conidia. I. Conidia.

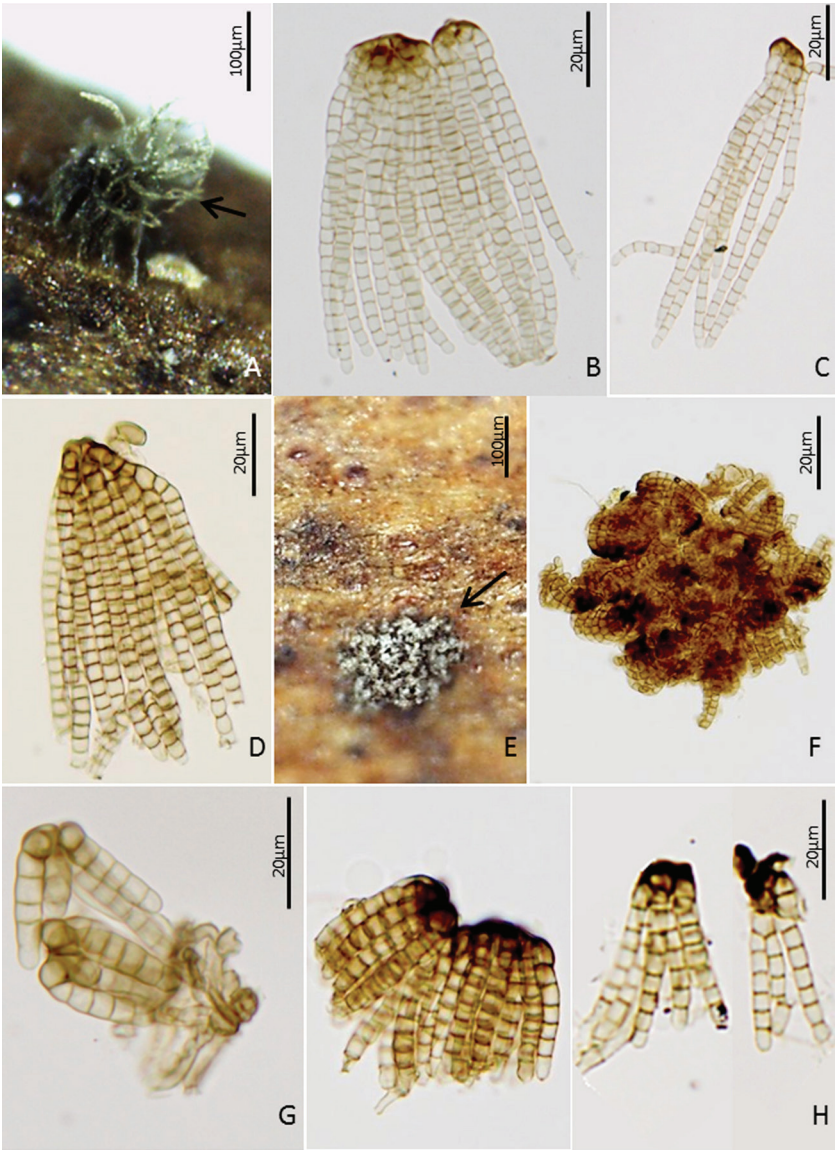

Fig 2. ***Cryptocoryneum condensatum*** (HUEFS 210440): A. Sporodochium on the natural substratum. B–D. Conidia. ***Cryptocoryneum rilstonei*** (HUEFS 210441): E. Sporodochium on the natural substratum. F. Sporodochium. G–H. Conidia.

Key to *Cryptocoryneum* species found in Brazil

1. Conidiophores cylindrical 2
1. Conidiophores clavate, inflated, 15–25 µm long; conidia 12–23 × 10,5–15 µm, with dark cap cells and 4 pendulous pale brown arms, 3–4-septate, 2.5–5 µm wide ..... *C. parvulum*
2. Conidiophores ≤90 µm long; conidia 40–85 × 20–35 µm, with 6–14 pendulous pale brown to yellowish brown or subhyaline arms, 15–20-septate, 2.5–4.5 µm wide ..... *C. condensatum*
2. Conidiophores ≤45 µm long; conidia 20–45 × 12–30 µm, with 3–9 pendulous subhyaline or pale brown arms, 3–9-septate, 4–6 µm wide ..... *C. rilstonei*

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